

Exponential notation	Quaternary polynomial notation	Binary polynomial notation of $GF(16)$ on $GF(2)$	Hexadecimal notation
0	0	0	0
$\alpha^0$	1	1	1
$\alpha^1$	x	x	2
$\alpha^2$	$x+2$	$x^2$	4
$\alpha^3$	$3x+2$	$x^3$	8
$\alpha^4$	$x+1$	$x+1$	3
$\alpha^5$	2	$x^2+x$	6
$\alpha^6$	$2x$	$x^3+x^2$	C
$\alpha^7$	$2x+3$	$x^3+x+1$	B
$\alpha^8$	$x+3$	$x^2+1$	5
$\alpha^9$	$2x+2$	$x^3+x$	A
$\alpha^{10}$	3	$x^2+x+1$	7
$\alpha^{11}$	$3x$	$x^3+x^2+x$	E
$\alpha^{12}$	$3x+1$	$x^3+x^2+x+1$	F
$\alpha^{13}$	$2x+1$	$x^3+x^2+1$	D
$\alpha^{14}$	$3x+3$	$x^3+1$	9

Table I

Fig. 1

Exponential notation	Binary polynomial notation of $GF(4)$ on $GF(2)$	Quaternary notation
0	0	0
$\alpha^0$	1	1
$\alpha^1$	x	2
$\alpha^2$	$x+1$	3

Table II

Fig. 2

Exponential notation	Quaternary polynomial notation	Binary polynomial notation	Hexadecimal notation
0	0	0	0
$\alpha^0$	1	1	1
$\alpha^1$	X	x	2
$\alpha^2$	X+2	$x^2$	4
$\alpha^3$	$3x+2$	$x^3$	8
$\alpha^4$	$X+1$	$x^3+1$	9
$\alpha^5$	2	$x^3+x+1$	B
$\alpha^6$	2x	$x^3+x^2+x+1$	F
$\alpha^7$	$2x+3$	$x^2+x+1$	7
$\alpha^8$	$X+3$	$x^3+x^2+x$	E
$\alpha^9$	$2x+2$	$x^2+1$	5
$\alpha^{10}$	3	$x^3+x$	A
$\alpha^{11}$	$3x$	$x^3+x^2+1$	D
$\alpha^{12}$	$3x+1$	$x+1$	3
$\alpha^{13}$	$2x+1$	$x^2+x$	6
$\alpha^{14}$	$3x+3$	$x^3+x^2$	C

Table III

Fig. 3

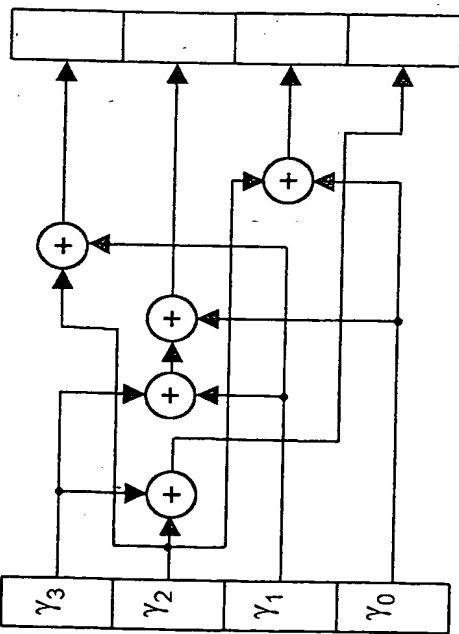


Fig. 4a

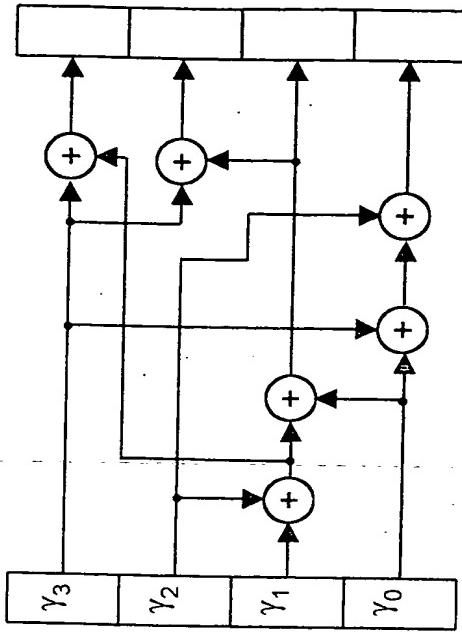


Fig. 4b

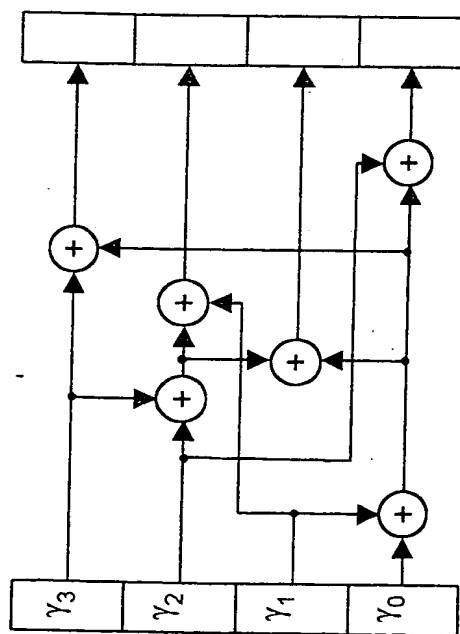


Fig. 5a

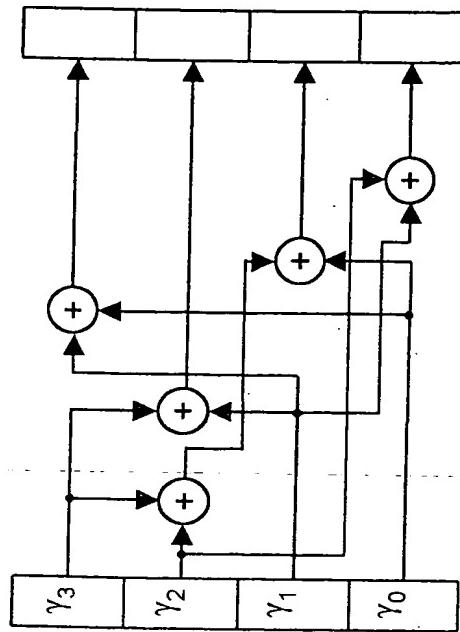


Fig. 5b

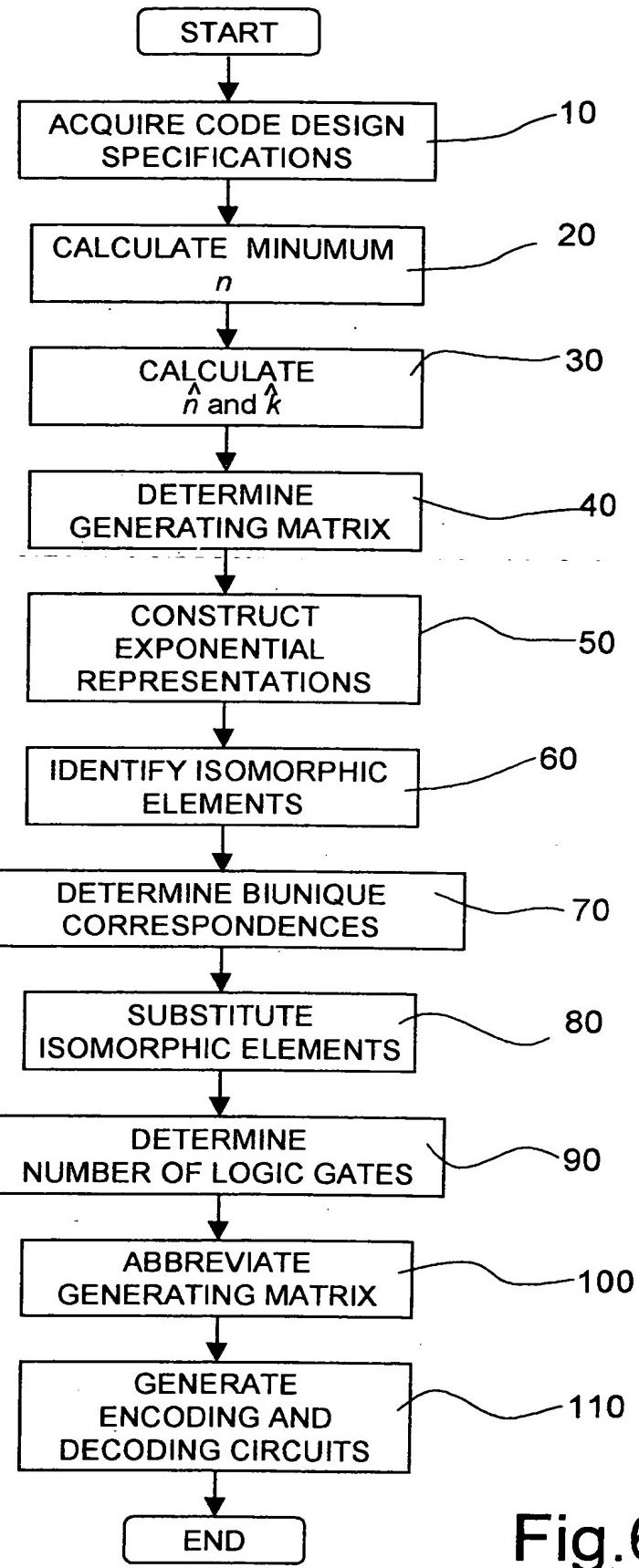


Fig.6

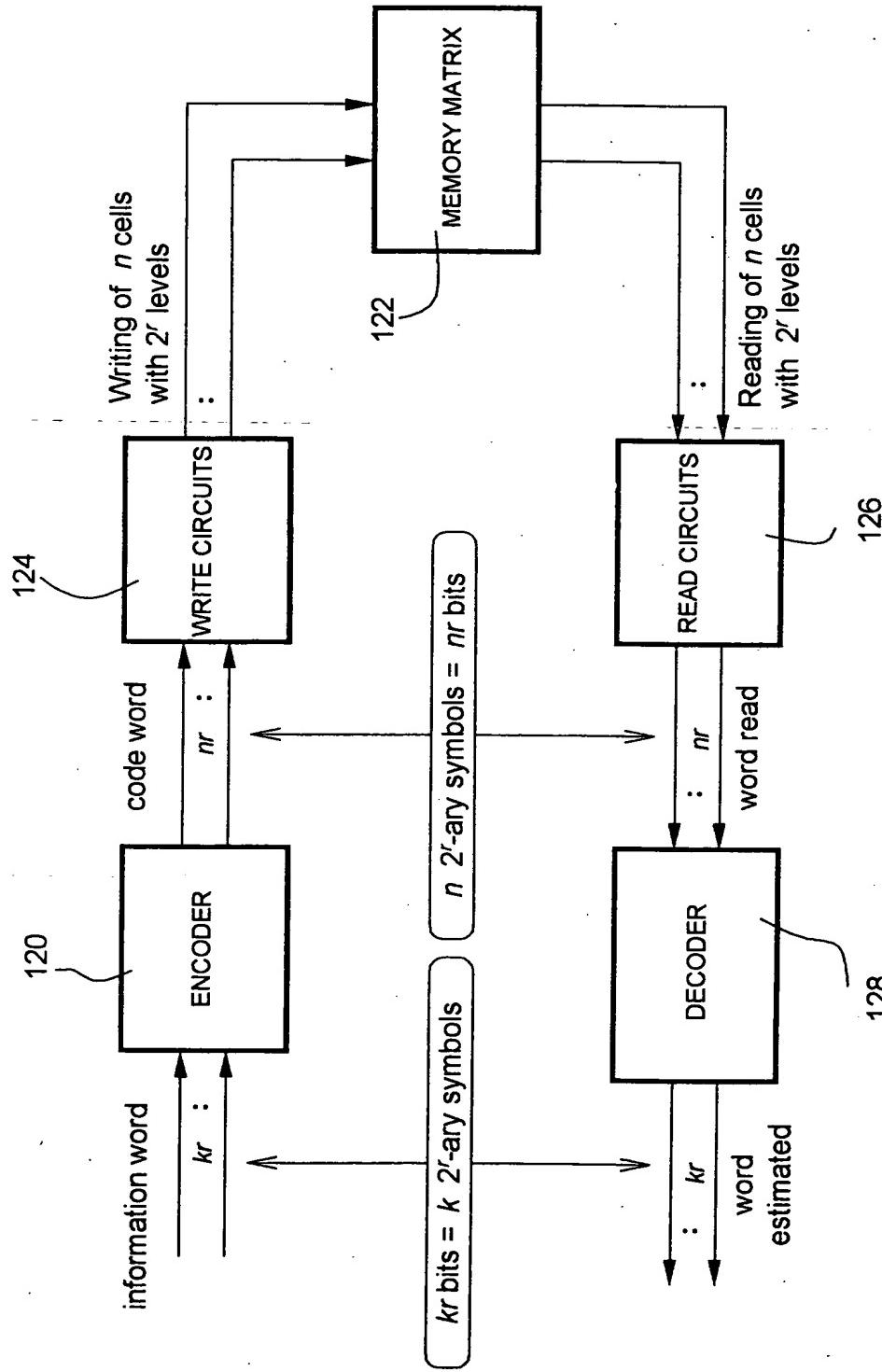


Fig. 7

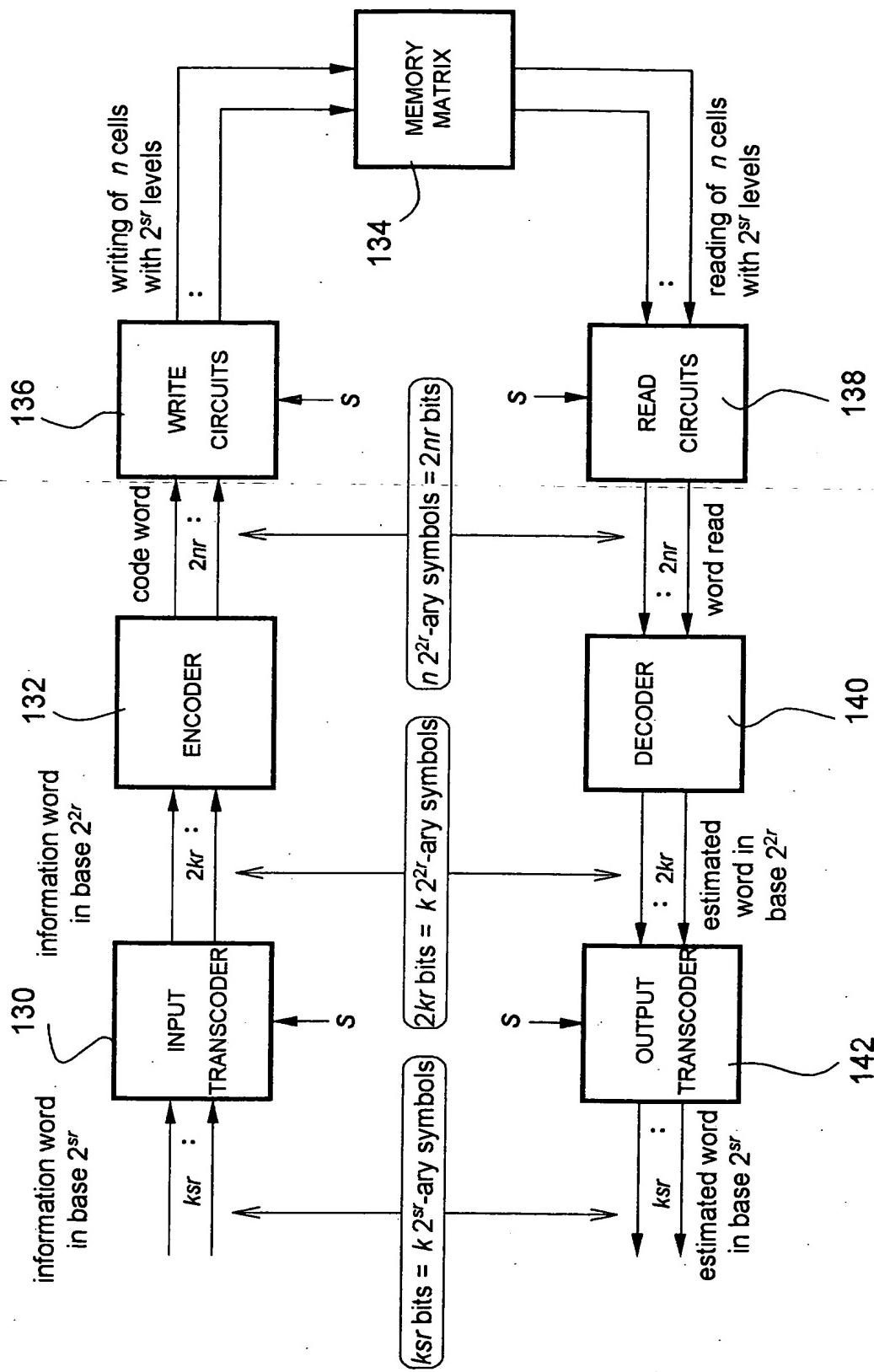


Fig. 8